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XII. *Observations on some Species of the Genera Tetrao and Ortyx, natives of North America; with Descriptions of Four new Species of the former, and Two of the latter Genus. By Mr. David Douglas, F.L.S.*

Read December 16, 1828.

IN the course of a journey across the continent of North America, performed in the years 1825, 1826, and 1827, having discovered several species of these genera, not before observed or described, I submit the following notice of them to the Society.

TETRAO.

1. *T. Urophasianus*. Mas. Brunnescenti-griseus, ferrugineo nigroque undulatus, collo anteriore abdomineque imo nigris, pectore albo plumis superioribus rhachibus rigidis, inferioribus in medio nigro-lineatis, plumis colli lateralibus elongatis, linearibus: caudâ cuneatâ, reatricibus subrigidis, acutis.

Fœm. Brunnescenti-grisea, albo nigroque parcè undulata; abdomine imo nigro, pectore albo nigro-fasciato, caudâ subcuneatâ, reatricibus subacutis.

T. Urophasianus. C. L. Bonaparte in *Zoological Journal*, vol. iii. p. 212.

Cock of the Plains. *Lewis and Clark's Travels*, p. 473.

Male. Bill black, one inch and three-fourths long: upper mandible

dible very strong; nostrils cushioned with fine short silky feathers. Head, neck, back and wings, of a uniform light brownish-gray, waved with black and reddish bars transversely. Plumage of the head and neck short and fine, with a series on the sides of the neck of long white hair-like feathers, terminating on the hind part of the neck with decomposed white feathers, which have linear black points, exceeding the length of the plumage by two inches. Throat marked with minute white spots, having a faint irregular white bar running from each eye. Upper part of the breast, immediately below the œsophagus, white, rigid, angular at the points, as if cut with an instrument. Œsophagus orbicular, naked, yellow. Lower part of the breast bluish-gray, the points of the feathers black in the middle, linear, more slender than those on the neck. Belly black, with a few scattered white feathers. Vent and legs light ash-gray. Tarsi one inch and three-fourths long. Toes strongly pectinated, the middle one feathered to the first joint. Quills 16, with dusky webs and white shafts. Scapulars and outer coverts same colour as the back; under coverts white. Tail 20 feathers, wedge-shaped, 10 inches long, somewhat rigid, of the same colour as the back: under coverts black tipped with white. Length 32 inches. Girth 22. Weight 6 to 8 pounds.

Female smaller, of the same colour as the male, with scattered white small feathers. Destitute of the series of long hair-like feathers on the neck, and white rigid scale-like ones which are found on the breast of the male bird. Tail partly wedge-shaped, somewhat acute. Flesh dark-coloured, and but tolerable in point of flavour. Food, buds, leaves and fruit of *Purshia tridentata*, *Artemisia*, seeds of *Cactus*, brown and black ants, and sand bugs.

Trachea

Trachea unusually large, and very strong. Gizzard disproportionately large, having but little muscular substance; and the horny consistence of the inner coat, so conspicuous in most species of this genus, is in the present remarkably thin, in many so thin, that it can only be observed but by careful examination. The pebbles in it seldom exceed 30 or 40, generally white quartz. Two cæcal appendages, moderately long, beautifully grooved or longitudinally fluted.

The flight of these birds is slow, unsteady, and affords but little amusement to the sportsman. From the disproportionately small, convex, thin-quilled wing,—so thin, that a vacant space half as broad as a quill appears between each,—the flight may be said to be a sort of fluttering more than any thing else: the bird giving two or three claps of the wings in quick succession, at the same time hurriedly rising; then shooting or floating, swinging from side to side, gradually falling, and thus producing a clapping whirring sound. When started, the voice is *Cuck, cuck, cuck*, like the Common Pheasant. They pair in March and April. Small eminences on the banks of streams are the places usually selected for celebrating the weddings, the time generally about sun-rise. The wings of the male bird are lowered, buzzing on the ground, the tail spread like a fan, somewhat erect; the bare yellow œsophagus inflated to a prodigious size, fully half as large as his body, and from its soft membranous substance being well contrasted with the scale-like feathers below it on the breast, and the flexile silky feathers on the neck, which on these occasions stand erect. In this grotesque form he displays in the presence of his intended mate a variety of pleasing attitudes. His love-song is a confused, grating, but not offensively disagreeable tone,—something that we can imitate, but have a difficulty of expressing,—*Hurr-hurr-hurr-r-r-r-hoo*, ending in a deep hollow tone,

tone, not unlike the sound produced by blowing into a large reed. Nest on the ground, under the shade of *Purshia* and *Artemisia*, or near streams among *Phalaris arundinacea*, carelessly constructed of dry grass and slender twigs. Eggs 13 to 17, about the size of those of a common fowl, of a wood-brown colour, with irregular chocolate blotches on the thick end. Period of incubation twenty-one to twenty-two days. The young leave the nest a few hours after they are hatched.

In the summer and autumn months these birds are seen in small troops, and in winter and spring in flocks of several hundreds. Plentiful throughout the barren arid plains of the river Columbia; also in the interior of North California. They do not exist on the banks of the river Missouri; nor have they been seen in any place east of the Rocky Mountains.

The short notice of this species, by the above-quoted distinguished ornithologist, appears to have been taken from a young male in indifferent plumage, it is correctly observed by him to represent *T. Urogallus* in the New Continent. Its vernacular name among the Kyûse Indians who reside on the Columbia, is *Pjâmis*.

2. *T. Urophasianellus*. Mas. Griseo-brunnescens, albo ferrugineo nigroque undulatus, nuchâ alisque albo maculatis, abdomine albo lateribus brunneo-fasciatis, rectricibus mediis 4 elongatis.

Fœm. Mari tertio minor, subpallidior, nuchâ nigro fasciatâ, rectricibus subelongatis.

Male. Bill brown. Head, neck and back, brownish-gray, waved with bars of a reddish and darker tinge. Plumage of the head and neck short and fine; breast and belly dusky-white edged with brownish-gray, and mixed with darker gray or brown spots. Quills 22; webs dusky, with darker shafts; the

the outer webs white, spotted; under-coverts bluish-white. Tarsi one inch long, thinly clothed with feathers of the same colour as the belly and vent. Toes scarcely pectinated, having instead small close hard scales. Tail consisting of 18 feathers, pointed, the four centre ones the longest. Length 19 inches. Breadth 12 inches. Weight one and a half to two pounds.

Female smaller, darker on the hind part of the neck; colour less distinctly marked, and the tail scarcely half so long as the male bird. The trachea and gizzard of the present species, as regards muscular consistence and size, differs but little from the preceding.

Their flight is swift and steady, with little noise. Their habits approach so closely to those of the former, that to describe them would be only repeating what has been stated of that species. Suffice it to say, they inhabit the same range of country, form their nests after the same fashion and in similar places, subsist on the same sort of food, having young at the same season. Eggs 11—15, light ash-colour, about the size of a pigeon's. The voice is *Chick, chick, chick*, the sounds running into each other. They are more numerous than the former, with whom they associate, and seem to live in harmony; they are shy, and difficult to be approached. The flesh is similar to that of the former.

3. *T. Sabini*. Rufus, nigro notatus: dorso maculis cordiformibus, nuchâ alisque lineis ferrugineo-flavis; abdomine albo brunneo fasciato; rectricibus fasciatis, fasciâ subapicali latâ nigrâ.

Male. Bill blackish-gray, lower mandible yellow, tipped with black. Head, neck and body, red, elegantly marked with black spots; those on the rump heart-shaped, saffron-coloured.

loured. Breast and belly yellowish-white with brown bars. Tarsi one inch long, rusty colour. Quills 20, dusky; outer webs irregularly and faintly brown, spotted; under-coverts white. Ruffle of 20 short black feathers, without any azure glossiness. Tail 18 feathers, square at the ends, waved or barred with lighter tints, terminating with a black band one inch broad. The three middle feathers speckled, and wanting the black band, the tips red: under-coverts foxy-red. Female smaller; colours less bright; ruffle shorter, and the bars on the tail less distinct. Length 18 inches. Breadth 13 inches. Weight two pounds.

Flight rapid, consisting of a quick clapping of the wing, and then a sudden darting or shooting, with scarcely any apparent motion. Food, buds of *Pinus*, *Fragaria*, *Rubus*, *Corylus* and *Alnus*, and berries of *Vaccinium*. Nest built on the ground in coppices of *Corylus*, *Amelanchier*, and *Pteris*, on the outskirts of pine-forests, composed of the slender twigs of *Pteris*, dry leaves, and grass. They pair in March. Eggs 9 to 11, dingy-white with red spots.

These birds are not so common as many others; they associate in flocks never exceeding eight or twelve, except for a short time in the early months of spring; at other seasons it rarely happens that more than three or four are seen together. In manner this bird is near akin to the well-known Wood Partridge of the United States (*T. umbellus*) and the Canadas, particularly in the strong attachment which it has for its young. The over-abundant care which it manifests for the brood seldom fails of directing the steps of the hunter to the nest or young; and should he come within a few yards, out sallies the mother in furious rage, with the tail spread, the wings buzzing on the ground, and the frill raised, to meet the intruder, continuing to run

run backwards and forwards ; and so great is her anxiety, that she will venture within two or three yards of him.

In another respect the present species agrees with *T. umbellus*, in perching on stumps of decayed trees in the darkest part of the forests, *drumming*, which is effected in the same way, namely, by giving two or three loud distinct claps with the wings, then others gradually quicker and quicker, until the sound dies in the distance,—not unlike the sound of very distant thunder. The voice is a continuation of measured sounds, not unlike the ticking of a large clock, *Tuck, tuck, tuck*, slowly pronounced, and, when the bird is on the wing, is a sort of chuckling noise. This very fine bird is an inhabitant of the woody parts of the coast of North-west America, between the parallels of 40° and 49° from Cape Mendocina on the south, to the Straits of Juan de Fuca, Quadra, and Vancouver's Island on the north.

The name is a tribute to the merits of my friend Joseph Sabine, Esq., whose intimate acquaintance with this widely-dispersed and highly interesting genus, and whose distinguished services in natural history in general, are universally known and justly appreciated.

4. *T. Franklinii*. Mas. Saturatè plumbeo-griseus nigro fasciatus ; gulâ pectore nuchâque nigris, tectricibus suprâ et infrâ nigris, apice albo.

Fœm. Pallidior, gulâ pectore nuchâque plumbeo-griseis.

Beak black ; irides hazel, with a large, bare, lunulated, fringed scarlet spot above the eye. Head, neck and back dark leaden-gray waved with narrow black bars ; throat, breast, and hinder part of the neck black. Belly ash-gray. Tarsi one inch long, light gray. Toes pectinated. Quills 24, the third the longest ; shafts white ; under coverts bluish-gray.

gray. Tail square, of 16 feathers, black, white at the points; upper and under coverts black tipped with white. Length 20 inches. Breadth 14 inches. Weight two pounds. Female a little smaller and of a lighter colour. Head, neck and body, leaden-gray, sparingly white, spotted on the belly. Flesh white, well-flavoured.

In manner there is nothing striking in this bird. Its flight is similar to the last-mentioned: the present, however, runs over the shattered rocks and among the brushwood with amazing speed, and only uses its wings as the last effort of escape. Nest on the ground, composed of dead leaves and grass, not unfrequently at the foot of decayed stumps, or by the side of fallen timber in the mountain woods. Eggs 5 to 7, dingy-white, somewhat smaller than that of *Columba Palumbus*.

I have never heard the voice of this bird, except its alarm note, which is two or three hollow sounds, ending in a yearning disagreeable grating noise, like the latter part of the call of the well-known *Numida Meleagris*. It is one of the most common birds in the valleys of the Rocky Mountains, from latitude 50° to 54°, near the sources of the Columbia river. It may perhaps be found to inhabit higher latitudes. Sparingly seen in small troops on the high mountains which form the base or platform of the snowy peaks "Mount Hood," "Mount St. Helens," and "Mount Baker," situated on the western parts of the continent.

In habit the present species assimilates more with *T. Canadensis* than any other. The unusually long square tail, constantly tipped with white, as is also the case with the upper and under coverts of the tail, are characters too prominent to be overlooked.

Named

Named in honour of Captain John Franklin, R.N., the amiable and distinguished Commander of the Land Arctic Expedition, to whom the lovers of American research owe so much.

5. *T. Richardsonii*. Mas. Pallidè plumbeo-griseus fusco sparsim undulatus: gulæ plumis in medio albis: abdomine saturatiore albo parçè maculato: maculâ laterali sub nuchâ albâ: rectricibus nigris, apice albicante.

Fœm. Minor, brunnescenti-grisea, dorso brunneo fasciato; subtus albo frequenter notata, rectricibus duabus mediis ferrugineo fasciatis.

T. Richardsonii. *Sabine Mss.*

Beak: upper mandible black; lower pale brown or horn-colour. Irides dark hazel, with a lunulate yellow granulate bare spot above the eye. Head, neck and breast, glossy lead-colour, with a tinge of light gray: and with black, dark, dusky or brown scattered minute spots. Chin finely spotted with white. Ear-coverts fuscous: the hind part of the neck partly white. Scapulars dark, red speckled. Belly light bluish-gray, white spotted, the centre of the feather partly white. Tarsi one inch and a half long. Toes pectinated. Quills 24; shafts white; inner web dusky, outer mottled; outer coverts brown, speckled; under coverts white. Tail square at the end, of 20 feathers, black, tipped with white; upper coverts black, speckled at the points; under coverts black, tipped with white.

Female smaller, brownish, gray-and-white mottled; the feathers of the neck with two narrow reddish bars; those of the back with only one, which is broader. The three centre feathers of the tail waved with red bands; colour of the others lighter than in the male bird. Length 20 inches. Breadth 15 inches. Weight two and a half to three pounds.

Flesh

Flesh white, excellent. Pair in April: nest formed of small twigs, leaves, and grass, on the declivities of the sub-alpine hills, in coppices of *Corylus* and *Betula*, very generally selecting the vicinity of mountain rills or springs. Eggs 13 to 19, nearly the size of a common fowl's, with large and small red specks.

Period of incubation three weeks. Food, buds of *Pinus*, catkins of *Betula*, *Alnus*, and *Corylus*, berries of *Fragaria* and *Vaccinium*. The voice is a continuation of distinct hollow sounds, *Hoo—hoo hoo*, like the cooing of a dove. Flight swift, steady, and particularly graceful, making but little buzzing or clapping noise. On being started from the dark shadowy pine-trees, their usual roosting-place, they descend, or, more properly, allow themselves to fall within a few feet of the ground before they commence flying,—a circumstance which often leads the sportsman to think he has secured his bird, until the object of his attention leaves him, darting and floating through the forest. This trait appears to be peculiar to this species. No bird is more readily destroyed; they will sit with apparent tranquillity on the rocks or pine branches after several shots have been fired.

In spring they are seen in great numbers basking in the sun on the southern declivities of the low hills, and in winter in the neighbourhood of springs, lakes, or large streams, in flocks of sixty or eighty. They are easily captured by small snares formed of sinews of the deer tribe. Very abundant on the sub-alpine regions of the Rocky Mountains in latitude 52° N. longitude 115° W. Still more numerous in the mountainous districts of the river Columbia in latitude 48° N., longitude 118° W.

Rare on the mountains of the north-west coast. I captured several in April 1825, and in the winters of 1826-7 several more; the

the birds from this last locality appear larger, the colours more distinct, and the white on the extremity of the tail much broader. I cannot for the present attempt to separate them from the species found on the Rocky Mountains, as my specimens from the coast are all destroyed; but probably they will be found on comparison distinct.

Three or four years ago, Mr. Sabine received specimens of this through the Hudson's Bay Company, probably taken in the mountains near the sources of the river Athabasca. The name was given by Mr. Sabine, in honour of Dr. Richardson, whose varied scientific acquirements have eminently contributed to the advancement of natural history.

The present species is nearly allied to *T. obscura* of Say, one of the birds observed during Long's Expedition to the Rocky Mountains.

ORTYX.

1. *O. picta*. Mas. Fusca subtùs ferrugineo flava nigro-fasciata : gulà rubrà purpureâ albo graciliter cinctà : pectore vertice caudâque plumbeis : cristâ nigrâ longissimâ lineari ; lineis superciliaribus albis, caudâ tectricibus inferioribus ferrugineis.

Fœm. Subcristata, gulà pectoreque fusco-ferrugineis, fusco fasciatis.

Male. Bill small, black. Crown of the head and breast lead-colour. Crest three linear black feathers, two inches long. Irides bright hazel-red; throat purple-red, bounded by a narrow white line forming a gorget above the breast, and extending round the eye and root of the beak. Back, scapulars, and outer coverts of the wings, fuscous-brown. Belly bright tawny or rusty-colour, waved with black, the points of the feathers white. Quills 18 feathers, the fourth the

the longest. Under coverts light brown mixed with a rusty colour. Tail 12 feathers, of unequal length, rounded, lead-colour, but less bright than the breast or crown of the head. Tarsi one inch and a quarter long, reddish. Toes webbed nearly to the first joint.

Female. Head and breast light fuscous-brown, the middle of the feathers black. Crest half an inch long. Throat whitish or light gray. Belly light gray waved with black, less bright than the male. Under coverts of the tail foxy-red. Length 10 inches. Girth 16 inches. Weight about twelve ounces. Flesh brown, well-flavoured.

From October until March these birds congregate in vast flocks, and seem to live in a state of almost perpetual warfare: dreadful conflicts ensue between the males, which not unfrequently end in the destruction of one or both combatants, if we may judge from the number of dead birds daily seen plucked, mutilated, and covered with blood. When feeding, they move in compact bodies, each individual endeavouring to outdo his neighbour in obtaining the prize. The voice is, *Quick—quick—quick*, pronounced slowly, with a gentle suspension of the voice between each syllable. At such times, or when surprised, the crest is usually thrown forward over the beak, and the reverse when retreating, being brought backwards and laid quite close on the back. Their favourite haunts are dry upland or undulating gravelly or sandy soils in open woods, or coppice thickets of the interior; but during the severity of winter, when the ground is covered with snow, they migrate in large flocks to the more temperate places in the immediate vicinity of the ocean. Seeds of *Bromus altissimus*, *Madia sativa*, and a tribe of plants allied to *Wedelia*, catkins of *Corylus*, leaves of *Fragaria*, and various insects, are their common food. Nest on
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the ground, in thickets of *Pteris*, *Aspidium*, *Rubus*, *Rhamnus*, and *Ceanothus*, neatly built with grass and dry leaves, secreted with so much caution, that without the help of a dog they can hardly be found. Eggs 11 to 15, yellowish-white, with minute brown spots; large in proportion to the bird. Pair in March. Common in the interior of California, and during the summer months extending as far northward as 45° north latitude, that is, within a few miles of the Columbian valley. No specimen of this exceedingly interesting bird exists in any collection. Several pairs, male and female, as well as several of the following species, which I prepared with great care in the interior of California, in November 1826, I had the misfortune (too painful to dwell upon) to lose, with a multitude of treasures botanical and zoological, crossing one of the rapid tributary streams of the river *Multnomah*, near its source in the mountains, on my return northwards. On this occasion I lost the labour of fifty-four days of fatigue and anxiety, the too frequent attendants of such undertakings.

2. *O. Douglasii*. Plumbeo-brunnea: cristâ erectâ alisque superioribus saturatè brunneis: his flavo-ferrugineo striatis: capite genis nuchâque brunneo- et flavo-ferrugineo striatis: gulâ albâ brunneo notatâ: abdomine albo guttato.

O. Douglasii. *Vigors Mss.*

Bill brown: crest linear, black, one inch long. Irides hazel-red. Body fuscous-brown, with a mixture of lead-colour and rusty or yellow streaks. Throat whitish, with brown spots. Belly foxy-red or tawny-white spotted. Quill-feathers 18. Scapulars and outer coverts bright brown. Under coverts light reddish-brown. Tail 12 unequal, rounded feathers. Legs reddish. Length 9 inches. Girth 12 inches. Weight ten ounces. Flesh pleasant; dark-coloured.

Female. Crest scarcely perceptible, darker.

This species appears to be an inhabitant of a more temperate climate than the preceding one, as it is never seen higher than 42° north latitude, and even that very sparingly in comparison to *O. picta* or *O. Californica*. The species do not associate together. In manner they are similar, at least as far as the opportunity I had of observing them went. I have never seen them but in winter dress, and know nothing of their nesting.

Mr. Vigors, the zealous and enlightened Secretary of the Zoological Society, in his partial kindness has done me the honour of placing my name to this species. To that gentleman I communicated an account of this bird shortly after my return to England; and subsequently he has had an opportunity of seeing a solitary specimen in a collection brought home by Captain Beechey.

In addition to *Tetrao*, I subjoin a few notes relative to some already described species. But, in the first place, I may be permitted to mention a new species, nearly allied to *T. Lagopus*, but much smaller, with a white tail, and when in winter-dress, snow-white, without the least particle of black. This is an inhabitant of the Rocky Mountains and the snowy peaks of North-west America. During my journey across the dividing ridge in April 1827, I killed several, which, from the extreme difficulties to be surmounted at that early season of the year, I was reluctantly obliged to leave behind me. This loss I do not now regret, as Dr. Richardson was fortunate enough to secure the species, an accurate description of which will be shortly given by him in his forthcoming Fauna of British North America.

T. Lagopus of Gmelin is not an uncommon bird on the Rocky Mountains; near the verge of perpetual snow, in latitude 54°;

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to the north, it is more plentiful ; and it is occasionally seen on similar altitudes contiguous to the lakes of the Columbia. On the north-west coast it exists as low as $45^{\circ} 7'$, the position of Mount Hood. This is the same bird as the Scotch Ptarmigan, and has been distinguished by Captain Sabine, in the Supplement to Captain Parry's First Voyage, as distinct from the next species.

T. rupestris of Gmelin. I did not meet with this bird on the Rocky Mountains, and therefore suppose it is confined to the northern parts of the continent and the adjacent islands, from which it was brought in abundance by the officers of the different Arctic Voyages.—For the differences between this and the preceding species, I refer to the accurate examination of Captain Sabine in the work above referred to, as well as to Mr. Sabine's Appendix to Captain Franklin's First Narrative. I am informed by Mr. Sabine, that this is the bird commonly met with in the northern parts of Europe, where it is erroneously considered as *T. Lagopus*, which species he believes to be exclusively confined to the mountains of Scotland and to the northern parts of America.

T. Saliceti. This bird, so common in Hudson's Bay, appears rare in the Rocky Mountains. I saw only one pair there ; it did not come under my notice on the north-west coast.

T. Canadensis. As far as I know, this bird has not yet been found to the west of the central ridge of the continent. A solitary individual is occasionally seen contiguous to the eastern base of that ridge, near the sources of Athabasca river, in 55° north latitude ; but the species does not become in anywise numerous until we reach the low woody countries in a similar parallel. About Lesser Slave Lake they abound, and on the woody places of

Saskatchewan river, and the streams that flow into Hudson's Bay.

T. Phasianellus. Like the last mentioned, is not seen west of the Rocky Mountains. It abounds on the dry undulating coppices or prairies of Saskatchewan river, throughout the whole chain of that stream. On the shores of Oxford lake this is the most common bird of the tribe.

T. Cupido. In August 1827 I killed several birds of this species between Red river and Pembina in 49° north latitude. This may, perhaps, be found to be its most northern range. It did not come under my observation on the western parts of the continent.

T. Umbellus. Perhaps no one of the genus extends over such a tract of country, and no one is more varied in plumage than the present bird. In the valleys of the Rocky Mountains, 54° north latitude, and a few miles northwards near the sources of Peace river, a supposed variety of this species is found,—different from *T. Umbellus* of Wilson. On comparing my specimens from that country with some which I prepared in the States of New York and Pennsylvania, and on the shores on the chain of lakes in Upper Canada, I find the following differences. First, the northern bird is constantly one-third smaller, of a very light speckled mixed gray, having little of that rusty colour so conspicuous in the southern bird:—secondly, the ruffle consists invariably of only 20 feathers, these short, black, and with but little azure glossiness; the crest-feathers are few and short. Should these characters hereafter be considered of sufficient importance for constituting a distinct species, it might perhaps be well to call it *T. Umbelloides*.

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I am partially acquainted with two other species of *Tetrao*, of the greatest interest, but for the present I forbear to describe them; the more especially, as I look forward at no distant period to again resuming my labours on the western parts of the same continent, the result of which, in due season, it will afford me the greatest pleasure to submit to the Society.